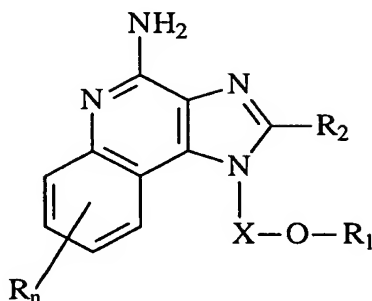


WHAT IS CLAIMED IS:

1. A compound of the formula (I):



(I)

wherein: **X** is $-\text{CHR}_5-$, $-\text{CHR}_5\text{-alkyl-}$, or $-\text{CHR}_5\text{-alkenyl-}$;

R₁ is selected from the group consisting of:

- $-\text{R}_4-\text{CR}_3-\text{Z}-\text{R}_6\text{-alkyl-}$;
- $-\text{R}_4-\text{CR}_3-\text{Z}-\text{R}_6\text{-alkenyl-}$;
- $-\text{R}_4-\text{CR}_3-\text{Z}-\text{R}_6\text{-aryl-}$;
- $-\text{R}_4-\text{CR}_3-\text{Z}-\text{R}_6\text{-heteroaryl-}$;
- $-\text{R}_4-\text{CR}_3-\text{Z}-\text{R}_6\text{-heterocyclyl-}$;
- $-\text{R}_4-\text{CR}_3-\text{Z}-\text{H-}$;
- $-\text{R}_4-\text{NR}_7-\text{CR}_3-\text{R}_6\text{-alkyl-}$;
- $-\text{R}_4-\text{NR}_7-\text{CR}_3-\text{R}_6\text{-alkenyl-}$;
- $-\text{R}_4-\text{NR}_7-\text{CR}_3-\text{R}_6\text{-aryl-}$;
- $-\text{R}_4-\text{NR}_7-\text{CR}_3-\text{R}_6\text{-heteroaryl-}$;
- $-\text{R}_4-\text{NR}_7-\text{CR}_3-\text{R}_6\text{-heterocyclyl-}$; and
- $-\text{R}_4-\text{NR}_7-\text{CR}_3-\text{R}_8\text{-}$;

Z is $-\text{NR}_5-$, $-\text{O-}$, or $-\text{S-}$;

R₂ is selected from the group consisting of:

- hydrogen;
- alkyl;
- alkenyl;

-aryl;
 -heteroaryl;
 -heterocyclyl;
 -alkyl-Y-alkyl;
 -alkyl-Y- alkenyl;
 -alkyl-Y-aryl; and
 - alkyl or alkenyl substituted by one or more substituents selected
 from the group consisting of:

-OH;
 -halogen;
 -N(R₅)₂;
 -CO-N(R₅)₂;
 -CO-C₁₋₁₀ alkyl;
 -CO-O-C₁₋₁₀ alkyl;
 -N₃;
 -aryl;
 -heteroaryl;
 -heterocyclyl;
 -CO-aryl; and
 -CO-heteroaryl;

R₃ is =O or =S;

R₄ is alkyl or alkenyl, which may be interrupted by one or more -O-
 groups;

each **R₅** is independently H or C₁₋₁₀ alkyl;

R₆ is a bond, alkyl, or alkenyl, which may be interrupted by one or more
 -O- groups;

R₇ is H, C₁₋₁₀ alkyl, or arylalkyl; or **R₄** and **R₇** can join together to form a
 ring;

R₈ is H or C₁₋₁₀ alkyl; or **R₇** and **R₈** can join together to form a ring;

Y is -O- or -S(O)₀₋₂;

n is 0 to 4; and

each **R** present is independently selected from the group consisting of C₁₋₁₀ alkyl, C₁₋₁₀ alkoxy, hydroxy, halogen and trifluoromethyl; or a pharmaceutically acceptable salt thereof.

5 2. A compound or salt of claim 1 wherein the heteroaryl is selected from the group consisting of 2-pyridyl, 3-pyridyl, 4-pyridyl, 2-thiazolyl, and 4-pyrazolyl.

3. A compound or salt of claim 1 wherein X is -CH(alkyl)-alkyl- wherein the alkyl groups can be the same or different.

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4. A compound or salt of claim 1 wherein X is -CH₂-CH₂-.

5. A compound or salt of claim 1 wherein X is -CH(C₂H₅)-CH₂-.

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6. A compound or salt of claim 1 wherein R₂ is H.

7. A compound or salt of claim 1 wherein R₂ is alkyl.

8. A compound or salt of claim 1 wherein R₂ is -alkyl-O-alkyl.

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9. A compound or salt of claim 1 wherein n is o.

10. A compound selected from the group consisting of:

25

N-{2-[2-(4-amino-2-methyl-1H-imidazo[4, 5-c]quinolin-1-yl)thoxy]ethyl}benzamide;

-70, p.70

N-{2-[2-(4-amino-2-ethyl-1H-imidazo[4, 5-c]quinolin-1-yl)thoxy]ethyl}benzamide;

-71 p.71

N-(2-{2-[4-amino-2-(2-methoxyethyl)-1H-imidazo[4, 5-c]quinolin-1-yl]ethoxy}ethyl)-N-methylcyclohexanecarboxamide; and

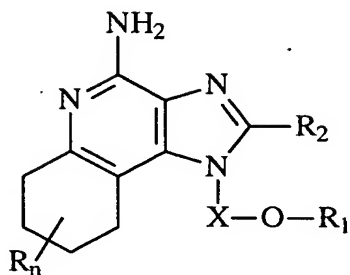
-73 p.73

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N-(2-{2-[4-amino-2-(2-methoxyethyl)-1H-imidazo[4,5-c]quinolin-1-yl]ethoxy}ethyl)-N-methylcyclohexanecarboxamide,

or a pharmaceutically acceptable salt thereof.

11. A compound of the formula (II)



(II)

5

wherein: **X** is $-\text{CHR}_5-$, $-\text{CHR}_5\text{-alkyl-}$, or $-\text{CHR}_5\text{-alkenyl-}$;

R₁ is selected from the group consisting of:

$-\text{R}_4\text{-CR}_3\text{-Z-R}_6\text{-alkyl}$;

$-\text{R}_4\text{-CR}_3\text{-Z-R}_6\text{-alkenyl}$;

10

$-\text{R}_4\text{-CR}_3\text{-Z-R}_6\text{-aryl}$;

$-\text{R}_4\text{-CR}_3\text{-Z-R}_6\text{-heteroaryl}$;

$-\text{R}_4\text{-CR}_3\text{-Z-R}_6\text{-heterocyclyl}$;

$-\text{R}_4\text{-CR}_3\text{-Z-H}$;

$-\text{R}_4\text{-NR}_7\text{-CR}_3\text{-R}_6\text{-alkyl}$;

15

$-\text{R}_4\text{-NR}_7\text{-CR}_3\text{-R}_6\text{-alkenyl}$;

$-\text{R}_4\text{-NR}_7\text{-CR}_3\text{-R}_6\text{-aryl}$;

$-\text{R}_4\text{-NR}_7\text{-CR}_3\text{-R}_6\text{-heteroaryl}$;

$-\text{R}_4\text{-NR}_7\text{-CR}_3\text{-R}_6\text{-heterocyclyl}$; and

$-\text{R}_4\text{-NR}_7\text{-CR}_3\text{-R}_8$;

20

Z is $-\text{NR}_5-$, $-\text{O-}$, or $-\text{S-}$;

R₂ is selected from the group consisting of:

-hydrogen;

-alkyl;

-alkenyl;

25

-aryl;

-heteroaryl;

-heterocyclyl;

-alkyl-Y-alkyl;
-alkyl-Y-alkenyl;
-alkyl-Y-aryl; and
-alkyl or alkenyl substituted by one or more substituents selected
from the group consisting of:

-OH;
-halogen;
-N(R₅)₂;
-CO-N(R₅)₂;
-CO-C₁₋₁₀ alkyl;
-CO-O-C₁₋₁₀ alkyl;
-N₃;
-aryl;
-heteroaryl;
-heterocyclyl;
-CO-aryl; and
-CO-heteroaryl;

R₃ is =O or =S;

R₄ is alkyl or alkenyl, which may be interrupted by one or more -O-
groups;

each R₅ is independently H or C₁₋₁₀ alkyl;

R₆ is a bond, alkyl, or alkenyl, which may be interrupted by one or more
-O- groups;

R₇ is H, C₁₋₁₀ alkyl, arylalkyl; or R₄ and R₇ can join together to form a ring;

R₈ is H or C₁₋₁₀ alkyl; or R₇ and R₈ can join together to form a ring;

Y is -O- or -S(O)₀₋₂;

n is 0 to 4; and

each R present is independently selected from the group consisting of C₁₋₁₀
alkyl, C₁₋₁₀ alkoxy, hydroxy, halogen, and trifluoromethyl;
or a pharmaceutically acceptable salt thereof.

12. A compound or salt of claim 11 wherein R₂ is H or alkyl.

13. A compound or salt of claim 11 wherein R₂ is -alkyl-O-alkyl.

14. A pharmaceutical composition comprising a therapeutically effective amount of a compound or salt of claim 1 and a pharmaceutically acceptable carrier.

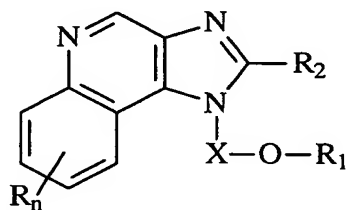
15. A method of inducing cytokine biosynthesis in an animal comprising administering a therapeutically effective amount of a compound or salt of claim 1 to the animal.

16. The method of claim 15 wherein the cytokine is IFN- α .

17. A method of treating a viral disease in an animal comprising administering a therapeutically effective amount of a compound or salt of claim 1 to the animal.

18. A method of treating a neoplastic disease in an animal comprising administering a therapeutically effective amount of a compound or salt of claim 1 to the animal.

19. A compound of the formula (III):



(III)

wherein: X is -CHR₅-, -CHR₅-alkyl-, or -CHR₅-alkenyl-;

R₁ is selected from the group consisting of:

-R₄-CR₃-Z-R₆-alkyl;

-R₄-CR₃-Z-R₆-alkenyl;

-R₄-CR₃-Z-R₆-aryl;

-R₄-CR₃-Z-R₆-heteroaryl;

-R₄-CR₃-Z-R₆-heterocyclyl;

$-R_4-CR_3-Z-H$;
 $-R_4-NR_7-CR_3-R_6-alkyl$;
 $-R_4-NR_7-CR_3-R_6-alkenyl$;
 $-R_4-NR_7-CR_3-R_6-aryl$;
 $-R_4-NR_7-CR_3-R_6-heteroaryl$;
 $-R_4-NR_7-CR_3-R_6-heterocyclyl$; and
 $-R_4-NR_7-CR_3-R_8$;

Z is $-NR_5-$, $-O-$, or $-S-$;

R₂ is selected from the group consisting of:

$-hydrogen$;
 $-alkyl$;
 $-alkenyl$;
 $-aryl$;
 $-heteroaryl$;
 $-heterocyclyl$;
 $-alkyl-Y-alkyl$;
 $-alkyl-Y-alkenyl$;
 $-alkyl-Y-aryl$; and
 $-alkyl$ or $alkenyl$ substituted by one or more substituents selected from the group consisting of:

$-OH$;
 $-halogen$;
 $-N(R_5)_2$;
 $-CO-N(R_5)_2$;
 $-CO-C_{1-10} alkyl$;
 $-CO-O-C_{1-10} alkyl$;
 $-N_3$;
 $-aryl$;
 $-heteroaryl$;
 $-heterocyclyl$;
 $-CO-aryl$; and
 $-CO-heteroaryl$;

R_3 is =O or =S;

R_4 is alkyl or alkenyl, which may be interrupted by one or more -O- groups;

each R_5 is independently H or C_{1-10} alkyl;

5 R_6 is a bond, or is alkyl, or alkenyl, which may be interrupted by one or more -O- groups;

R_7 is H, C_{1-10} alkyl, or arylalkyl; or R_4 and R_7 can join to form a ring;

R_8 is H or C_{1-10} alkyl; or R_7 and R_8 can join to form a

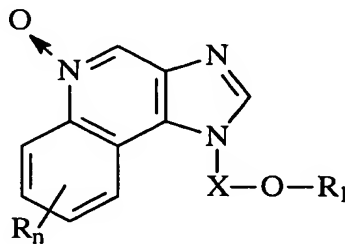
Y is -O- or -S(O)₀₋₂;

10 n is 0 to 4; and

each R present is independently selected from the group consisting of C_{1-10} alkyl, C_{1-10} alkoxy, hydroxy, halogen and trifluoromethyl;

or a pharmaceutically acceptable salt thereof.

15 20. A compound of the formula (IV):



(IV)

wherein X is -CHR₅-, -CHR₅-alkyl-, or -CHR₅-alkenyl-;

20 R_1 is selected from the group consisting of:

- $R_4-CR_3-Q-R_6$ -alkyl;

- $R_4-CR_3-Q-R_6$ -alkenyl;

- $R_4-CR_3-Q-R_6$ -aryl;

- $R_4-CR_3-Q-R_6$ -heteroaryl;

25 - $R_4-CR_3-Q-R_6$ -heterocyclyl;

- R_4-CR_3-Q-H ;

- $R_4-NR_5-CR_3-R_6$ -alkyl;

- $R_4-NR_5-CR_3-R_6$ -alkenyl;

-R₄-NR₇-CR₃-R₆-aryl;
-R₄-NR₇-CR₃-R₆-heteroaryl;
-R₄-NR₇-CR₃-R₆-heterocyclyl; and
-R₄-NR₇-CR₃-R₈;

5

Q is -NR₅- or -O-;

R₃ is =O or =S;

R₄ is alkyl or alkenyl, which may be interrupted by one or more -O-
groups;

each R₅ is independently H or C₁₋₁₀ alkyl;

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R₆ is a bond, alkyl, or alkenyl, which may be interrupted by one or more
-O- groups;

R₇ is H, C₁₋₁₀ alkyl, or arylalkyl; or R₄ and R₇ can join to form a ring;

R₈ is H or C₁₋₁₀ alkyl; or R₇ and R₈ can join to form a ring;

n is 0 to 4; and

15

each R present is independently selected from the group consisting of C₁₋₁₀
alkyl, C₁₋₁₀ alkoxy, halogen and trifluoromethyl;
or a pharmaceutically acceptable salt thereof.

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21. A pharmaceutical composition comprising a therapeutically effective amount of a
compound or salt of claim 11 and a pharmaceutically acceptable carrier.

22. A method of inducing cytokine biosynthesis in an animal comprising administering
a therapeutically effective amount of a compound or salt of claim 11 to the animal.

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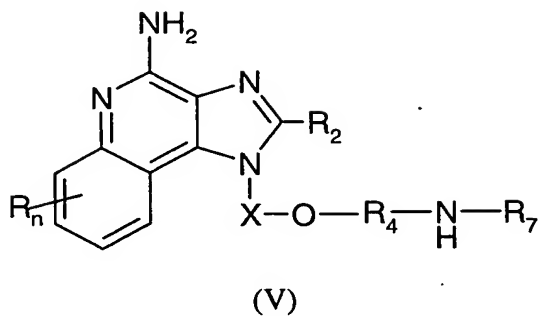
23. The method of claim 22 wherein the cytokine is IFN- α .

24. A method of treating a viral disease in an animal comprising administering a
therapeutically effective amount of a compound or salt of claim 11 to the animal.

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25. A method of treating a neoplastic disease in an animal comprising administering a
therapeutically effective amount of a compound or salt of claim 11 to the animal.

26. A compound of the formula (V):



wherein: **X** is $-\text{CHR}_5-$, $-\text{CHR}_5\text{-alkyl-}$, or $-\text{CHR}_5\text{-alkenyl-}$;

R₂ is selected from the group consisting of:

-hydrogen;

-alkyl;

-alkenyl;

-aryl;

-heteroaryl;

-heterocyclyl;

-alkyl-Y-alkyl;

-alkyl-Y-alkenyl;

-alkyl-Y-aryl; and

-alkyl or alkenyl substituted by one or more substituents selected from the group consisting of:

-OH;

-halogen;

$-\text{N}(\text{R}_5)_2$;

$-\text{CO}-\text{N}(\text{R}_5)_2$;

$-\text{CO}-\text{C}_{1-10}\text{ alkyl}$;

$-\text{CO}-\text{O}-\text{C}_{1-10}\text{ alkyl}$;

$-\text{N}_3$;

-aryl;

-heteroaryl;

-heterocyclyl;

-CO-aryl; and
-CO-heteroaryl;

R₄ is alkyl or alkenyl, which may be interrupted by one or more -O-
groups;

5 each **R**₅ is independently H or C₁₋₁₀ alkyl;

R₇ is H, C₁₋₁₀ alkyl, or arylalkyl; or **R**₄ and **R**₇ can join to form a ring;

Y is -O- or -S(O)₀₋₂-;

n is 0 to 4; and

10 each **R** present is independently selected from the group consisting of C₁₋₁₀
alkyl, C₁₋₁₀ alkoxy, hydroxy, halogen and trifluoromethyl;

or a pharmaceutically acceptable salt thereof.

27. A compound selected from the group consisting of :

1-[2-(2-aminoethoxy)ethyl]-2-methyl-1H-imidazo [4, 5-*c*]quinolin-4-amine;

15 1-[2-(2-aminoethoxy)ethyl]-2-ethyl-1H-imidazo [4, 5-*c*]quinolin-4-amine;

1-[2-(2-aminoethoxy)ethyl]-2-ethoxymethyl-1H-imidazo [4, 5-*c*]quinolin-4-amine;

and pharmaceutically acceptable salts thereof.

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